Complete Summary

GUIDELINE TITLE

Adult asthma care guidelines for nurses: promoting control of asthma.

BIBLIOGRAPHIC SOURCE(S)

Registered Nurses Association of Ontario (RNAO). Adult asthma care guidelines for nurses: promoting control of asthma. Toronto (ON): Registered Nurses Association of Ontario (RNAO); 2004 Mar. 104 p. [119 references]

Registered Nurses Association of Ontario (RNAO). Adult asthma care guidelines for nurses: promoting control of asthma: supplement. Toronto (ON): Registered Nurses Association of Ontario (RNAO); 2007 Feb. 15 p. [38 references]

GUIDELINE STATUS

This is the current release of the guideline.

The Registered Nurses Association of Ontario (RNAO) has made a commitment to ensure that this practice guideline is based on the best available evidence. In order to meet this commitment, a monitoring and revision process has been established for each guideline every 3 years.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Asthma

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Nursing
Pulmonary Medicine

INTENDED USERS

Advanced Practice Nurses
Nurses

GUIDELINE OBJECTIVE(S)

- To provide nurses (RNs and RPNs) working in diverse settings with an evidence-based summary of basic asthma care for adults
- To assist nurses who are not specialists in asthma care to identify adults with asthma, determine whether or not their asthma is under acceptable control, provide asthma education (specifically, self-management actions plans, use of inhaler/devices and medications), facilitate appropriate referrals, and access community resources
- The February 2007 supplement should be used in conjunction with the original guideline as a tool to assist in decision making for individualized client care and to ensure that appropriate structures and supports are in place to provide the best possible care.

TARGET POPULATION

Adults with asthma

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

Assessment of level of asthma

Management

1. Asthma education
2. Action plan implementation and compliance
3. Measurement of peak expiratory flow rates
4. Referral to physician, community resources, and asthma educators, as applicable
5. Organization, and policy approaches and strategies

Treatment

1. Medications
    - Controllers
    - Relievers
2. Inhaler/device technique training

MAJOR OUTCOMES CONSIDERED

- Asthma control
- Morbidity
- Quality of life
- Healthcare costs

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases
Searches of Unpublished Data

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

March 2004 Guideline

An initial database search for existing asthma guidelines was conducted in early 2001 by a company that specializes in searches of the literature for health related organizations, researchers, and consultants. A subsequent search of the MEDLINE, Embase, and CINAHL databases for articles published from January 1, 1995, to February 28, 2001, was conducted using the following search terms and key words: "asthma," "self care," "self management," "practice guideline(s)," "clinical practice guideline(s)," "standards," "consensus statement(s)," "consensus," "evidence-based guidelines," and "best practice guidelines." In addition, a search of the Cochrane Library database for systematic reviews was conducted concurrently using the above search terms.

A metacrawler search engine (metacrawler.com) plus other available information provided by the project team was used to create a list of Web sites known for publishing or storing clinical practice guidelines.

Panel members were asked to review personal archives to identify guidelines not previously identified. In a rare instance, a guideline was identified by panel members and not found through the database or Internet search. These guidelines were developed by local groups and had not been published to date. Results of this strategy revealed no additional clinical practice guidelines.

The core screening criteria search method revealed multiple guidelines, several systematic reviews, and numerous articles related to asthma. The final step in determining whether the clinical practice guideline would be critically appraised was to apply the following criteria:

- Guideline was in English
- Guideline was dated 1995 or later

- Guideline was strictly about the topic area
- Guideline was evidence-based (i.e., contained references, description of evidence, sources of evidence)
- Guideline was available and accessible for retrieval

February 2007 Supplement

Members of the revision panel critically appraised guidelines, published since 2002, using the *Appraisal of Guidelines for Research and Evaluation* (AGREE) instrument.

NUMBER OF SOURCE DOCUMENTS

March 2004 Guideline

Seven guidelines were selected as foundation documents for this guideline.

February 2007 Supplement

The literature search yielded 1,140 abstracts. Forty studies met inclusion criteria. Four international guidelines, published since 2002, were used to inform the revision process.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Level I: Evidence is based on randomized controlled trials (or meta-analysis of such trials) of adequate size to ensure a low risk of incorporating false-positive or false-negative results.

Level II: Evidence is based on randomized trials that are too small to provide Level I evidence. They may show either positive trends that are not statistically significant or no trends and are associated with a high risk of false-negative results.

Level III: Evidence is based on nonrandomized controlled or cohort studies, case series, case-control studies, or cross-sectional studies.

Level IV: Evidence is based on the opinion of respected authorities or expert committees as indicated in published consensus conferences or guidelines.

Level V: Evidence is based on the opinion of those who have written and reviewed the guideline, based on their experience, knowledge of the relevant literature, and discussion with their peers.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

A panel of nurses and researchers with expertise in asthma care, asthma education, and asthma research from institutional, community, and academic settings was convened under the auspices of the Registered Nurses Association of Ontario (RNAO).

Following the extraction of identified recommendations and content from seven guidelines, the panel underwent a process of review, discussion, and consensus on the key evidence-based assessment criteria and levels of severity and control, ultimately identifying key subtopic areas for nursing intervention recommendations.

The panel members divided into subgroups to develop draft recommendations for these key nursing interventions. This work included a critical review of the selected literature by the member(s) of the working group, including review of the foundation guidelines, systematic review articles, primary research studies, and other supporting literature for the purpose of drafting recommendations.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Published cost analyses were reviewed.

METHOD OF GUIDELINE VALIDATION

Clinical Validation-Pilot Testing
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The development process yielded an initial set of recommendations, which were reviewed by the entire development panel for potential gaps and need for supporting evidence, leading to consensus on a final draft set of recommendations. Recommendations were only advanced where consensus was achieved.

This draft document was submitted to a set of external stakeholders for review and feedback. Stakeholders represented various healthcare professional groups, clients, and families, as well as professional associations. External stakeholders were asked to provide feedback using a questionnaire consisting of open and closed-ended questions. The results were compiled and reviewed by the development panel; discussion and consensus resulted in minor revisions to the draft document prior to pilot testing.

A pilot implementation practice setting was identified through a "Request for Proposal" (RFP) process. Practice settings in Ontario were asked to submit a proposal if they were interested in pilot testing the recommendations of the guideline. The proposals underwent an external review process and the successful applicant (practice setting) selected. A nine-month pilot was undertaken to test and evaluate the recommendations for practice in a community-based hospital setting (Mississauga, Ontario).

The development panel reconvened following completion of the pilot to review the experiences of the pilot site, consider the evaluation results and review any new literature published since the initial development phase. All these sources of information were used to update and revise the document prior to publication.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the National Guideline Clearinghouse (NGC)*: In February 2007, the Registered Nurses Association of Ontario amended the current practice recommendations for this topic. Through the review process, no recommendations were deleted. However, a number of recommendations were re-worded for clarity or to reflect new knowledge. These have been noted below as "changed" or "unchanged." Three new recommendations have been added.*

The levels of evidence supporting each recommendation (Level I–V) are defined at the end of the "Major Recommendations" field.

Assessment of Asthma Control

Recommendation 1.0 (Unchanged)

All individuals identified as having asthma, or suspected of having asthma, will have their level of asthma control assessed by the nurse.

Recommendation 1.1 (Unchanged)

Every client should be screened to identify those most likely to be affected by asthma. As part of the basic respiratory assessment, nurses should ask every client two questions:

- Have you ever been told by a physician or a health care provider that you have asthma?
- Have you ever used a puffer/inhaler or asthma medication for breathing problems?

(Level of Evidence = IV)

Recommendation 1.2 (Unchanged)

For individuals identified as having asthma or suspected of having asthma, the level of asthma control should be assessed by the nurse. Nurses should be knowledgeable about the acceptable parameters of asthma control, which are:

- Use of inhaled short-acting $beta_2$ agonist <4 times/week (unless for exercise)
- Having daytime asthma symptoms <4 times/week
- Experience of night-time asthma symptoms <1 time/week
- Normal physical activity levels
- No absence from work or school
- Infrequent and mild exacerbations

(Level of Evidence = IV)

Recommendation 1.3 (Unchanged)

For individuals identified as potentially having uncontrolled asthma, the level of acuity needs to be assessed by the nurse and an appropriate medical referral provided (i.e., urgent care or follow-up appointment). *(Level of Evidence = IV)*

Asthma Education

Recommendation 2.0 (Unchanged)

Asthma education, provided by the nurse, must be an essential component of care.

Recommendation 2.1 (Unchanged)

The client's asthma knowledge and skills should be assessed and where gaps are identified, asthma education should be provided. *(Level of Evidence = I)*

Recommendation 2.2 (Changed February 2007)

Education should include as a minimum, the following:

- Basic facts about asthma
- Roles/rationale for medications

- Device technique(s)
- Self-monitoring
- Action plans
- Smoking cessation (if applicable)

(Level of Evidence = IV)

Action Plans

Recommendation 3.0 (New February 2007)

Every client with asthma should have an individualized written asthma action plan for guided self-management.

(Level of Evidence = I)

Recommendation 3.1 (Changed February 2007)

An action plan should be developed in partnership with the healthcare professional and be based on the evaluation of symptoms with or without peak flow measurement.

(Level of Evidence = I)

Recommendation 3.2 (Unchanged)

For every client with asthma, the nurse needs to assess his/her understanding of the asthma action plan. If a client does not have an action plan, the nurse needs to provide a sample action plan, explain its purpose and use, and coach the client to complete the plan with his/her asthma care provider. *(Level of Evidence = V)*

Recommendation 3.3 (Unchanged)

Where deemed appropriate, the nurse should assess, assist, and educate clients in measuring peak expiratory flow rates. A standardized format should be used for teaching clients how to use peak flow measurements. *(Level of Evidence = IV)*

Medications

Recommendation 4.0 (Changed February 2007)

Nurses will understand and discuss asthma medications with their clients.

Recommendation 4.1 (Changed February 2007)

Nurses will understand and discuss the two main categories of asthma medications (controllers and relievers) with their clients. *(Level of Evidence = IV)*

Recommendation 4.2 (Changed February 2007)

Clients with asthma will have their inhaler/device technique assessed by the nurse to ensure accurate use. Clients with suboptimal technique will be coached in proper inhaler/device use. *(Level of Evidence = I)*

Referrals

Recommendation 5.0 (Changed February 2007)

The nurse will facilitate referrals for clients with asthma as appropriate.

Recommendation 5.1 (Changed February 2007)

Clients with poorly controlled asthma will be advised to see a physician. *(Level of Evidence = II)*

Recommendation 5.2 (Changed February 2007)

Clients with asthma should be offered links to community resources. *(Level of Evidence = IV)*

Recommendation 5.3 (Changed February 2007)

Clients with asthma should be referred to an asthma educator in their community, if appropriate and available. *(Level of Evidence = IV)*

Education

Recommendation 6.0 (Changed February 2007)

Nurses working with clients with asthma must have the appropriate knowledge and skills to:

- Identify the level of asthma control
- Provide basic asthma education
- Conduct appropriate referrals to physician and community resources

(Level of Evidence = IV)

Organization and Policy

Recommendation 7.0 (New February 2007)

Access to asthma education should be available within a community. *(Level of Evidence = V)*

Recommendation 8.0 (New February 2007)

It is essential that asthma educators obtain and maintain the certified asthma educator (CAE) designation.

Recommendation 9.0 (Unchanged)

Organizations should have available placebos and spacer devices for teaching, sample templates of action plans, educational materials, and resources for client and nurse education and, where indicated, peak flow monitoring equipment. *(Level of Evidence = IV)*

Recommendation 10.0 (Unchanged)

Organizations must promote a collaborative practice model within an interdisciplinary team to enhance asthma care. *(Level of Evidence = IV)*

Recommendation 11.0 (Unchanged)

Organizations need to ensure that a critical mass of health professionals are educated and supported to implement the asthma best practice guidelines in order to ensure sustainability. *(Level of Evidence = V)*

Recommendation 12.0 (Changed February 2007)

Agencies and funders need to allocate appropriate resources to ensure adequate staffing and a positive healthy work environment in order to provide asthma care consistent with best practice. *(Level of Evidence = V)*

Recommendation 13.0 (New February 2007)

Healthcare organizations will use key indicators outcome measurements, and observational strategies that allow them to monitor:

- The implementation of guidelines
- The impact of the guidelines on optimizing client care
- Efficiencies, or cost effectiveness achieved

(Level of Evidence = IV)

Recommendation 14.0 (Unchanged)

Nursing best practice guidelines can be successfully implemented only when there are adequate planning, resources, organizational and administrative support, and appropriate facilitation. Organizations may develop a plan for implementation that includes:

- An assessment of organizational readiness and barriers to education
- Involvement of all members (whether in a direct or indirect supportive function) who will contribute to the implementation process
- Dedication of a qualified individual to provide the support needed for the education and implementation process
- Ongoing opportunities for discussion and education to reinforce the importance of best practices
- Opportunities for reflection on personal and organizational experience in implementing guidelines

(Level of Evidence = IV)

Refer to the "Description of the Implementation Strategy" field for more information.

Definitions:

Level I: Evidence is based on randomized controlled trials (or meta-analysis of such trials) of adequate size to ensure a low risk of incorporating false-positive or false-negative results.

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CLINICAL ALGORITHM(S)

An algorithm is provided in the original guideline document for assessing asthma control.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Where evidence was available from randomized controlled trials and systematic reviews, recommendations were based on these data. Where there was a lack of evidence from high quality studies, recommendations were based on the best available evidence or expert opinion. The type of evidence is provided for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Improved quality care and improved outcomes (improved quality of life and overall reduction in morbidity)
- Improved identification of adults with asthma and determination of whether or not their asthma is under acceptable control, improved provision of asthma education (specifically, self-management actions plans, use of inhaler/devices

and medications), appropriate referrals, and improved access to community resources

POTENTIAL HARMS

Asthma medications are associated with certain side effects.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- While best practice guidelines represent a statement of best practice based on the best available evidence, they are not intended to be applied in a "cookbook fashion" and replace the nurse's judgment for the individual client. This document needs to be reviewed and applied, based on the specific needs of the organization or practice setting/environment, as well as the needs and wishes of the client.
- These best practice guidelines are related only to nursing practice and not intended to take into account fiscal efficiencies. These guidelines are not binding for nurses, and their use should be flexible to accommodate client/family wishes and local circumstances. They neither constitute a liability nor a discharge from liability. While every effort has been made to ensure the accuracy of the contents at the time of publication, neither the authors nor Registered Nurses Association of Ontario (RNAO) give any guarantee as to the accuracy of the information contained in them, nor accept any liability, with respect to loss, damage, injury, or expense arising from any such errors or omissions in the contents of this work. Any reference throughout the document to specific pharmaceutical products as examples does not imply endorsement of any of these products.
- The February 2007 supplement to the nursing best practice guideline *Adult Asthma Care Guidelines for Nurses: Promoting Control of Asthma* is the result of a three year scheduled revision of the guideline. Additional material has been provided in an attempt to provide the reader with current evidence to support practice. Similar to the original guideline publication, this document needs to be reviewed and applied, based on the specific needs of the organization or practice setting/environment, as well as the needs and wishes of the client. This supplement should be used in conjunction with the guideline as a tool to assist in decision making for individualized client care, as well as ensuring that appropriate structures and supports are in place to provide the best possible care.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

March 2004 Guideline

Best practice guidelines can only be successfully implemented if there are adequate planning, resources, organizational and administrative support, as well as appropriate facilitation. In this light, the Registered Nurses Association of Ontario (RNAO), through a panel of nurses, researchers, and administrators, has

developed a *Toolkit: Implementation of clinical practice guidelines* based on available evidence, theoretical perspectives, and consensus. The *Toolkit* is recommended for guiding the implementation of any clinical practice guideline in a healthcare organization.

The "Toolkit" provides step-by-step directions to individuals and groups involved in planning, coordinating, and facilitating guideline implementation. Specifically, the *Toolkit* addresses the following key steps in implementing a guideline:

1. Identifying a well-developed, evidence-based clinical practice guideline
2. Identification, assessment, and engagement of stakeholders
3. Assessment of environmental readiness for guideline implementation
4. Identifying and planning evidence-based implementation strategies
5. Planning and implementing an evaluation
6. Identifying and securing required resources for implementation and evaluation

Implementing practice guidelines that result in successful practice changes and positive clinical impact is a complex undertaking. The *Toolkit* is one key resource for managing this process.

February 2007 Supplement

The Registered Nurses Association of Ontario and the guideline panel have compiled a list of implementation strategies to assist health care organizations or health care disciplines who are interested in implementing this guideline. A summary of these strategies follows:

- Have at least one dedicated person such as an advanced practice nurse or a clinical resource nurse who will provide support, clinical expertise and leadership. The individual should have good interpersonal, facilitation and project management skills.
- Conduct an organizational needs assessment related to the care of adults with asthma to identify current knowledge and further educational requirements.
- Create a vision to help direct the change effort and develop strategies for achieving and sustaining the vision.
- Establish a steering committee comprised of key stakeholders and interdisciplinary members committed to leading the change initiative. Identify short term and long-term goals.
- Identify and support designated best practice champions on each unit to promote and support implementation. Celebrate milestones and achievements, acknowledging work well done.
- Provide organizational support such as having the structures in place to facilitate best practices in asthma care. For example, having an organizational philosophy that reflects the value of best practices through policies and procedures. Develop new assessment and documentation tools.

IMPLEMENTATION TOOLS

Clinical Algorithm
Foreign Language Translations

Patient Resources
Tool Kits

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Registered Nurses Association of Ontario (RNAO). Adult asthma care guidelines for nurses: promoting control of asthma. Toronto (ON): Registered Nurses Association of Ontario (RNAO); 2004 Mar. 104 p. [119 references]

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Mar (addendum released 2007 Feb)

GUIDELINE DEVELOPER(S)

Registered Nurses Association of Ontario - Professional Association

SOURCE(S) OF FUNDING

Funding was provided by the Ontario Ministry of Health and Long Term Care.

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

This guideline was developed by a panel of nurses and researchers convened by the Registered Nurses Association of Ontario (RNAO), conducting its work independent of any bias or influence from the Ministry of Health and Long-Term Care.

GUIDELINE STATUS

This is the current release of the guideline.

The Registered Nurses Association of Ontario (RNAO) has made a commitment to ensure that this practice guideline is based on the best available evidence. In order to meet this commitment, a monitoring and revision process has been established for each guideline every 3 years.

GUIDELINE AVAILABILITY

March 2004 Guideline

Electronic copies: Available in Portable Document Format (PDF) in English and French from the Registered Nurses Association of Ontario (RNAO) Web site.

February 2007 Supplement

Electronic copies: Available in Portable Document Format (PDF) from the RNAO Web site.

Print copies: Available from the Registered Nurses Association of Ontario (RNAO), International Affairs and Nursing Best Practice Guidelines Program, 158 Pearl Street, Toronto, Ontario M5H 1L3.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Toolkit: implementation of clinical practice guidelines. Toronto (ON): Registered Nurses Association of Ontario (RNAO); 2002 Mar. 88 p.

Electronic copies: Available in Portable Document Format (PDF) in English and French from the Registered Nurses Association of Ontario (RNAO) Web site.

Print copies: Available from the Registered Nurses Association of Ontario (RNAO), International Affairs and Nursing Best Practice Guidelines Program, 158 Pearl Street, Toronto, Ontario M5H 1L3.

Evaluation tools for effective patient data collection are also available from the RNAO Website.

PATIENT RESOURCES

The following is available:

- Health education fact sheet. The goal is asthma control. Toronto (ON): Registered Nurses Association of Ontario (RNAO); 2004 Mar. 2 p.

Electronic copies: Available in Portable Document Format (PDF) in English and French from the Registered Nurses Association of Ontario (RNAO) Web site.

Print copies: Available from the Registered Nurses Association of Ontario (RNAO), Nursing Best Practice Guidelines Project, 158 Pearl Street, Toronto, Ontario M5H 1L3.

The appendices of the original guideline document include an asthma medication comparison table and sample action plans for patients.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This NGC summary was completed by ECRI on September 16, 2004. The information was verified by the guideline developer on October 14, 2004. This NGC summary was updated by ECRI Institute on December 28, 2007. The updated information was verified by the guideline developer on March 4, 2008.

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Registered Nurses Association of Ontario (2004). Adult asthma care guidelines for nurses: promoting control of asthma. Toronto, Canada: Registered Nurses Association of Ontario.

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